EGYPT AFFORDABLE HOME PRODUCTION PROGRAM (AHPP)

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Table of Contents

Acronyms

AHPP	Affordable Home Production Program
GOE	Government of Egypt
GSF	Guarantee and Subsidy Fund
MFCs	Mortgage Finance Companies
MoF	Ministry of Finance
MoH	Ministry of Housing
MoI	Ministry of Investment
MoJ	Ministry of Justice
PTI	Payment-to-income Ratio
REFL	Real Estate Finance Law

Egypt Affordable Home Production Program ("AHPP")
Program Description

A. Summary	
1. Concept	Via the participating entities listed below, the Government of Egypt (GOE) has committed to a six-year program (the "Affordable Home Production Program") that will develop 500,000 affordable homes for sale to Low-Income Egyptian families and individuals.
2. Agencies Involved	The AHPP will be developed and administered principally by the Guarantee and Subsidy Fund (GSF), with support from other ministries and agencies as described in Part F below.
B. Eligible Households, Eligible Properties	
3. Eligibility	Participating families are eligible ("Eligible Households") if they are Low Income, currently defined as a maximum of: • Families, LE 1,500 per month income. • Individuals, LE 1,200 per month. Household assets (such as for a down payment) are excluded from the Low Income definition.
4. Payment-to-Income (PTI) Ratio	Eligible Households will pay no more than twenty-five percent (25%) of their income for mortgage debt service, as is currently specified in the Real Estate Finance Law (REFL).
5. Location	"Eligible Properties" will be new-construction flats to be developed in New Communities areas on vacant land ("AHPP Sites") designated and provided by the Ministry of Housing. See Part D below.
6. Tenure	AHPP Homes to be developed will be for-sale.
7. Configuration	Homes will generally be flats within high-rise developments, with a range of configurations (size in square meters, total rooms, total bedrooms) and room sizes. A typical flat will be 40-50 square meters.
8. Price of Homes	The overall goal is an average cost of LE 50,000 or less per AHPP Home.
9. Registered Title	AHPP Homes will be conveyed in fee simple, with registered title.

C. Financing: Customer Level	
10. Cost of Buying an AHPP Home	In addition to stipulated purchase prices for AHPP Homes, AHPP Home buyers will have other closing costs, so the total will be: **+ Purchase price of AHPP Home** **+ Loan application fees** **<u>+ Closing fees and legal costs</u>** **= Total uses of funds needed to buy an AHPP Home** Each element of the financing is described below.
11. Sources of Funds to Buy the Home	Eligible Households will buy homes for a Home Price that they will pay with three sources of funds: **+ Down payment (savings accumulated by home buyer)** **+ "Save For Your Home" subsidy (defined below)** **<u>+ AHPP loan</u>** **= Total sources of funds** Each element of the financing is described below.
12. Cash Down Payment	At the time of buying an AHPP Home, Eligible Households will pay a "Down Payment" equal to the amount needed, after the AHPP loan and the Down Payment Subsidy, to cover all remaining costs. Eligible Households will accumulate down payments through personal savings, with incentives such as "Save For Your Home" subsidy matching described below.
13. Down Payment Subsidy	Eligible Households will receive a one-time cash subsidy ("Down Payment Subsidy"), payable upon their purchase of an AHPP Home. The Down Payment Subsidy will be equal to the lesser of: • [200]% of their cash down payment, or • LE 10,000 per household.
14. AHPP Loans	Eligible Households that qualify may receive "AHPP Loans" that meet the terms outlined in the next section. AHPP Loans will be originated by Housing Lenders (defined below) and be funded through the GSF, which in turn will sell AHPP Bonds (see below),
15. Terms of AHPP Loans	AHPP Loans will have the following terms: • Term of [20] years. • Interest as provided in the next section. • Level monthly payments to amortize the loan over its term. • AHPP Loans may be prepaid, in whole or in part, at any time, without prepayment penalty.
16. Security for AHPP Loans	AHPP Loans will have the following security: • A first mortgage on the AHPP Home. • Accelerate in full (become due and payable) upon sale of the AHPP Home. • No junior financing or liens may be placed on the AHPP Home without the AHPP Lender's written consent.

17. AHPP Loan Interest and Payment	AHPP Loans will bear interest at the fixed rate of [12.75]%, *of which* the Eligible Household will pay an amount ("Household Payment") equal to the lesser of: • [8.00]%, • [25]% of their income, or • An interest amount that can be supported with a Minimum Monthly Payment of LE [160].
	Any difference between the AHPP Loan Payment and the Household Payment will be funded through an AHPPP Interest Subsidy as described below.
18. Income Verification	Eligible Households will have to demonstrate they have: • Income *below* the Low Income ceiling, *and* • Income sufficient to cover the Household Payment.
D. Production and Delivery	
19. AHPP Developers	Each AHPP property will be developed and constructed by a real estate development company ("AHPP Developer") selected by the GSF subject to an AHPP Master Development Agreement.
20. AHPP Development Agreement	Each AHPP Master Development Agreement will specify: • The site infrastructure to be provided by the AHPP Developer. • The physical configuration and layout of all property on the AHPP Site. • All non-residential property (such as stores, shops, offices, parking lots or garages) to be developed on the AHPP Site. • The construction specifications for each home in the AHPP Site. • Fixed purchase prices for each AHPP Home.
21. Ground Lease	All AHPP Sites will be leased ("Ground Lease") to AHPP development companies. Ground Leases will have a term of [99] years and other terms designed to assure that AHPP Homes meet AHPP construction, cost, and eligibility criteria.
22. Land	AHPP Developers will acquire land for AHPP properties ("AHPP Sites") in New Communities sites designated by the Ministry of Housing ("MoH") subject to approval by the GSF as AHPP program developer. AHPP Sites will be conveyed via Ground Leases.

23. Trunk Infra-structure	With respect to a particular AHPP Site, "trunk infrastructure" means all public works, not on the AHPP Site, that are necessary to make the AHPP Site suitable for development, including establishment of roads (including connections to large highways as appropriate), water/ sewer connections, electrical power and wires to the site boundary, as well as clearance for rights of way or other easements to allow legal access. • On or before the time of land conveyance, the MoH will also provide all trunk infrastructure to AHPP Sites, at a price ("Trunk Cost") equal to one-half (50%) of actual costs. • Each AHPP Developer will pay the Trunk Cost in cash, with such payment treated as a draw against the AHPP Construction Loan.
24. Site Infra-structure	AHPP Developers will provide all required site infrastructure as specified in their AHPP Master Development Agreement.
25. AHPP Construction Loan	Lenders approved by the GSF (each, a "Construction Lender") will provide each AHPP Developer with a single "AHPP Construction Loan" per AHPP Site, with these terms: • Construction Loans will have a term equal to [36] months: [30] months of expected construction and a [6]-month grace period. • Construction Loan payments will be disbursed only as the AHPP Developer incurs "Approved Construction Costs," meaning documented expenditures, as certified by the supervising architect, consistent with the approved construction plan.
	• Each 'drawdown' of the AHPP Construction Loan will equal the Approved Construction Cost less retainage of [10]% of the Construction Cost. • Interest will accrue at the annualized rate of [12.75]%. Interest will be compounded monthly.
	• Recourse to each AHPP Developer. • Principal will be repayable from the proceeds of individual AHPP Home sales. Unless otherwise specified, all Construction Lenders must be Housing Lenders as defined below.
26. AHPP Loans	AHPP Loans will be originated by "Housing Lenders," who will be able to sell them, at par, to the GSF provided the loans meet the AHPP origination criteria.

27. Housing Lenders	"Housing Lenders" include: • Regulated Mortgage Finance Companies (MFCs). • Banks and financial institutions. • Other specialized mortgage originators who meet AHPP criteria (to be specified). • Property developers, *if* they set up subsidiaries that meet the MFC capital requirements and are subject to the same reporting requirements as MFCs. All Housing Lenders will agree that they will be bound by and will comply with all applicable provisions of the Real Estate Finance Law of 2001.
28. AHPP Bonds	Periodically, the GSF will issue "AHPP Bonds," with the following terms: • Term of [20] years. Subject to periodic advance redemption. • Fixed interest at [11.75]%. • Level monthly payments to amortize the loan over the term. • Security as provided in the next section.
29. Security for AHPP Bonds	AHPP Bonds will have the following security: a. Pledge of a pool of AHPP Loans. b. A Bond Debt Service Reserve, initially equal to [six] months' AHPP Bond debt service, to be funded out of each AHPP Bond issue. c. Pledge of the AHPP Interest Subsidy Account applicable to that bond issue (see next section).
30. AHPP Interest Subsidy	Every year, the GOE (via its selected ministry) will advance to the GSF a total sum equal to the expected annual AHPP Interest Subsidy required for all AHPP Loans outstanding. All such advances shall be held in special "AHPP Bond Reserve Escrows," one escrow for each AHPP Bond issue. Funds will be invested and interest will become part of the AHPP Bond Reserve Escrow.
E. AHPP Developer Obligations and Remedies	
31. Development Agreement	Each AHPP Development Agreement will commit its AHPP Developer to all the obligations described in this Part E.
32. Construction Contract	Each AHPP Site will be developed under a standard fixed-price construction contract containing standard performance requirements and penalties for late delivery.
33. Change Orders	The Construction Contract will allow for change orders as generally provided.
34. Performance Bond	Each AHPP Developer will provide a payment and performance bond to secure its completion of construction.

F. Roles of Respective Entities and Ministries	
35. Participating Entities	The AHPP will be administered through the Guarantee and Subsidy Fund as principal program designer and AHPP lender, reporting to the Ministry of Investment ("MoI"), with substantial support and assistance from the Ministry of Finance ("MoF"), Ministry of Housing ("MoH"), and Ministry of Justice ("MoJ), among other ministries.
36. GSF	The Guarantee and Subsidy Fund will: • Design the AHPP program in all aspects. • Serve as the communications and information point for all aspects of the AHPP. • Work with the Ministry of Housing, identify and approve AHPP Sites.
	• Approve all AHPP Developers and award AHPP Sites to particular developers. • Approve Housing Lenders to issue AHPP Loans.
	• Buy AHPP Loans at par, subject to conditions. • Contract loan servicing of AHPP Loans to MFCs or others it shall from time to time designate. • Issue AHPP Bonds.
	• Administer the AHPP Interest Subsidy. • Enforce AHPP Construction Contracts.
37. Ministry of Housing	The Ministry of Housing will: 1. Work with the GSF, identify suitable New Communities land for AHPP Sites. 2. Build trunk infrastructure for AHPP Sites under agreements with the GSF. 3. Deliver AHPP Sites once the trunk infrastructure is in place, at a price equal to (i) zero for the land, plus (ii) one-half (50%) of the documented trunk infrastructure costs. 4. Hold AHPP Ground Leases.
38. Ministry of Investment	The Ministry of Investment will: 1. Fund the AHPP Interest Subsidy. 2. Supervise the GSF's activities under the AHPP Program.
39. Ministry of Justice	The Ministry of Justice will: • Deliver registered title to AHPP Homes. • Provide a title-registration update mechanism to allow efficient transfer of properties when they are resold.

Affordable Home Production Program ("AHPP")
Options for Funding and Financing the Program

1. Executive Summary

To accomplish President Mubarak's pledge to develop 500,000 affordable new for-sale homes within six years and make efficient use of scarce state financial resources, a concerted strategy is required to bring down the overall cost of occupancy for the target Low-Income households. In conceptual structural terms, there are only a few ways to make the homes affordable:

1. **Cost.** Lower the total development cost.
2. **Loan payments.** Reduce the monthly loan payment through GSF credit products.
3. **Down payments.** Raise home buyers' down payment capacity through a savings and match program.

This paper lays out the options and briefly discusses characteristic features of each one.

We understand that the GOE has allocated LE 7.5 billion to the Affordable Home Production Program. While this is a very significant and welcome commitment, it may not be enough unless the GOE also undertakes structural change and creative deployment of options such as those presented in this paper.

2. Background

2.1 The Affordable Home Production Program

President Mubarak has pledged that, over the next six years, the Government of Egypt (GOE) will create 500,000 affordable new for-sale homes, a program that in this paper we call the "Affordable Home Production Program."

These homes are targeted to Low-Income households, defined under current Egyptian law to mean individuals with incomes below LE 1,000 per month, or families below LE 1,500 per month.

Affordable homes in this price range (that is, LE 35,000 to LE 50,000) are not being produced by the formal new construction market today, for the simple reason that, as we will show, Low-Income households cannot afford them. Production in this market segment therefore requires a significant government commitment. At issue are:

1. What is the best combination of government financial resources?
2. How much will the best combination cost, and when will the funds be needed?

The GOE has set aside LE 3.0 billion as an initial up-front capital allocation to the Guarantee and Subsidy Fund (GSF), which has been designated as the government agency with principal responsibility to implement the Affordable Home Production Program.

2.2 Challenges of the Affordable Home Production Program

Such a large increase in affordable housing production will not only consume significant public financial resources, it will also require and stimulate growth and change in the nation's housing delivery infrastructure: its development and construction industries, new financial products and services, as well as possible changes in existing laws, Presidential decrees, and regulations. Establishing that delivery infrastructure in place is expected to take two years. Construction of the first homes may require another half year, leaving three-and-a-half years of actual development to deliver the homes.

At the same time, the two-and-a-half-year pre-construction interval raises the possibility of having families buy homes before completion, and pay deposits or even large portions of the purchase price. Assuming such deposits are safe and secure, the funds advanced can help reduce the funding gap.

In view of the foregoing, the GOE has commissioned this concept package and will shortly be commissioning a quantitative nationwide demand study to identify the type and shape of demand and the blockages that may exist to delivering affordable homes meeting that demand.

These two analytical tasks should be seen as first steps in a multi-year task that will involve numerous ministries (including without implied limitation Finance, Housing, Investment, and Justice) and agencies (including the MFA and GSF), new innovations such as the proposed Liquidity Facility, and other new and changing institutions, both public and private. Continuity of strategic vision and managerial execution is strongly desirable as the marketplace will change even as the Program rolls out.

Additionally, even though subsidized production is an independent GOE initiative, it will benefit from and have a profound impact upon changes in the financial markets such as those encompassed in the EFS project. Experience in South Africa and elsewhere has demonstrated how large-scale production that is not integrated with market reforms can undercut those reforms. The Program initiatives should therefore work in close concert with the existing EFS tasks already underway.

2.3 The Concept Package and this Options Paper

This paper is one of three linked deliverables (collectively, the "Concept Package") commissioned to aid the GOE and GSF in conceptualizing the AHPP, consisting of:

1. This Options Paper, listing the various options available for narrowing the cost-value gap.
2. A cash flow spreadsheet model ("Cash Flow Model") enabling GOE policymakers and others to quantify the impact of various combinations of incentives and options.
3. A Recommendations Paper presenting a suggested approach in light of all the preceding factors.

These materials should be read in the context of our previous report, The Guarantee and Subsidy Fund (GSF): Goals, Options, and Recommendations.

3. Creating affordable homes: the options

Home affordability is largely a consequence of three factors:

1. Home price
2. Supportable loan
3. Down payment

Fiscal initiatives can favorably influence each of these.

3.1 The price of new AHPP homes

It should be apparent that the lower the per-home price, the more affordable it will be. The GOE has unique resources that enable it to deliver homes at lower cost than any other supplier.

3.1.1 In-kind: land and infrastructure

The GOE can provide resources in-kind (that is, property rather than cash):

1. Land, which can be provided for zero cost.
2. Trunk infrastructure (roads, off-site power and water/ sewer), also provided at 50% of cost.

(Site infrastructure [on-site power and water/sewer] is provided by the developer in the total cost of completing the property.)

Because the resources are in-kind, they do not add to the property's sale price, but they do represent government expenditures, either via non-housing ministries or in cash profits foregone.

3.1.2 Property size, configuration, and amenities

The largest single driver of property hard cost is its size (in square meters), which in turn influences configuration (how many rooms, how many bedrooms). Other factors such as amenities (e.g. more than one bathroom, number and type of appliances) will also affect the overall cost

Low-Income households vary in income and family size. It is therefore, more sensible to allow a variety of configuration types (and price points) within any AHPP development. That would be desirable not just for initial construction, but also resale, since it would encourage customers to move up or down in their home size as their circumstances change.

3.1.3 Apartment interior build-out

It is conceivable that apartments should be provided with only partial interior renovation (e.g. non-load-bearing walls, floors), allowing home buyers to finish these themselves.

3.1.4 Soft costs

A "soft" cost is any expenditure that buys nothing tangible. Soft costs include interest, permit fees, application fees, settlement charges, title fees, and taxes.

These costs may be imposed by market practice or government law or regulation. If the latter, the government may waive these fees, charges, or costs for selected buyers or for qualifying properties.

Very little property in Egypt has registered title, yet in the developed world, registered title is a precondition to favorable mortgage finance. Having registered title will also substantially lower financing costs (because MFCs and others can provide formal mortgage loans). Accordingly, we believe that all AHPP properties should have registered title from completion and should have a good transfer of title required for any resale.

3.2 Affordable loans to AHPP Low-Income households

A loan is affordable when the borrower can make the monthly payment. As we will see, this in turn derives from three factors:

1. Interest rate stated on the loan.
2. Term of the loan (for amortization of principal).
3. Income level of the borrower, and in particular, whether payment-to-income (PTI) ratio may be changed.

3.2.1 Reducing the debt service constant

A "debt service constant" is the monthly payment, measured as a percentage of the loan's original unpaid principal balance (UPB). A lower debt service constant (DSC) means that the same monthly amount repays a larger UPB, and in turn, increases the borrower's affordable home price. Lower DSC's are achieved in two ways:

1. Lower interest rates.
2. Longer loan repayment term.

3.2.1.1 Lowering the interest rate

Markets establish interest rates through a build-up process consisting of four elements:

Table 3.2.1.1
Built-up market interest rate

Example	*Element*	*Comments*
8.25%	Safe rate	Government (Treasury) notes
1.50%	Spread for sector risk	Typically relates to industry sector
1.50%	Spread for borrower credit risk	Risk of default and cost of mitigating loss given default
1.50%	Spread to cover servicing fees	Administrative costs, back office, money transfers
12.75%	**Resulting interest rates**	**Rates are sector-specific and change with markets**

Government can influence interest rates directly, indirectly, or fiscally.

A. Directly: As the lender. The government can choose to be its own lender. In effect, when the government does this (whether through a ministry or through a government entity such as the GSF) it is deploying its own credit and substituting that for the marketplace.

If markets are efficient, the difference between market cost and government cost reflects true risk. However, there are some circumstances, particularly with new programs, or when a program is vulnerable principally to government actions, where the market's perceived risk is much higher than the real risk (or the government's perceived risk).

Direct lending could potentially eliminate the two risk premiums -- sector and credit -- but would not eliminate the premium for providing loan servicing.

The government could undertake to service the loans directly, and this would not be reflected in direct customer cost, but instead invites inefficiency and would undermine the nascent MFC industry.

B. Indirectly: As a credit enhancer. The government can lower the perceived risk of a private bond issue (e.g. bonds sold by the GSF) by providing a form of credit enhancement. Here again, the enhancement may be (a) direct -- a government promise to redeem the bonds if they defaulted, or (b) indirect -- via a commitment to fund equity capital into the GSF if the GSF experienced losses.

As government moves into credit enhancement, the capital markets will shift their underwriting focus from assessing the viability of the *program* to evaluating the quality of the *guarantee*. There are times when that shift benefits the issuing agency and times when it does not.

C. Fiscally: Through tax incentives. In countries where interest is taxable, the government can fiscally influence interest rates by allowing issuers to issue bonds whose interest is exempt from taxation. Such an approach is used widely in the US, for example, where tax-exempt securities carry a lower interest rate that makes their yield equivalent to the *after-tax* yield of similar risk/ maturity instruments. These tax exemptions are so valuable that they are strictly rationed and allocated among the states based on their population.

Tax exemption is not relevant in Egypt as interest is already exempt from all taxation.

3.2.1.2 Extending the loan term

1. Value of creating a long-term amortization loan. Extending the loan term substantially reduces the debt service constant (DSC) because a monthly payment includes both interest and principal, and the principal must be amortized (paid off) over the loan term. This is illustrated in Table 3.2.1.2:

Table 3.2.1.2
Elements of the debt service constant (DSC)

Element	*7-year loan term*	*12-year term*	*20-year term*
+ Interest rate	+12.75%	+12.75%	+12.75%
+ Principal amortization	+8.92%	+3.56%	+1.10%
= Debt service constant (DSC)	**+21.67%**	**+16.31%**	**+13.85%**
Payment on LE 30,000 loan	**LE 542**	**LE 408**	**LE 346**

Thus, a typical customer gains nearly LE 200 per month in reduced debt service just by changing the loan term from 7 years (market) to 20 years (government-enhanced).

The drop in debt service constant is more dramatic at higher interest rates, so in an environment such as Egypt, where nominal financing rates as above 10%, there is a huge benefit in providing loans whose amortization period is longer than the current market financing of roughly seven years.

There is an enormous benefit in creating a 20-year term loan product.

Longer loan terms not only mean more people can participate; they also mean many more will buy homes sooner. The following sequence demonstrates how this works:

Longer loan term → lower debt service constant
Lower debt service constant → higher supportable loan amount
Higher supportable loan amount → lower down payment required
Lower down payment required → lower government subsidy match (see ¶3.3 below)
Lower down payment required → ***faster achievement of required down payment***

2. Mechanisms to create a long-term loan. The government can accomplish the longer term either directly, as a lender, or indirectly via a credit mechanism:

a. *Directly, as a lender*. The GSF could make twenty-year loans.[1] Direct lending exposes the GSF not just to credit risk but also to interest-rate fluctuations.[2]

[1] The Ministry of Housing (MoH) already makes *forty*-year loans. We cannot recommend the MoH's practice, as it is very expensive in terms of capital outlay and constitutes an enormous disguised subsidy that also distorts the market.

[2] Even assuming a favorable configuration of home construction cost, down payment, and financing terms, total debt capital for 500,000 homes will be in the vicinity of ***LE 15-20 billion***. Obviously neither the GSF nor any other non-budgetary agency has that amount of funding, so the lender (GSF) will look to the capital markets and will sell long-term housing bonds backed by GSF credit. These bonds will likely have to be variable-interest, or to have an investor 'put' provision (investor ability to sell at par) if interest rates rise. Either way, the GSF as bond issuer will be exposed to adverse movement in the environment of long-term interest rates.

b. *Indirectly, through guarantee obligations*. A twenty-year amortization term could be achieved, for instance, with a short-term five-year loan, if the loan balloons (becomes due and payable in full at its then-balance) instead of fully amortizing over the shorter interval. If the GSF guaranteed to buy the loans at par on their balloon date, lenders would not have the normal credit risk and would be willing to offer a longer-term amortization.[3] Once the GSF had bought the loan, it could then sell *new* short-term (for example, five-year) balloon bonds and the process would repeat.

There are some technical challenges in an indirect, guarantee-obligation approach to long-term financing, but they can be addressed if the political commitment is present. However, either direct or indirect long-term lending raises two other implementation issues: interest rate risk and the importance of registered title and other home-resale home-refinancing mechanisms.

Definitions

Balloon: a moment when a loan becomes due and payable in full, at its remaining unpaid principal balance, even though (a) the borrower is making the normal monthly payment, and (b) there is still a remaining amortization period to go. Balloons allow lenders to know they will have their capital out only for a stipulated period, so they encourage lenders to offer lower rates.

Put option: a lender's contractual right to sell a loan, at its remaining unpaid principal balance, at par (100%), to a designated buyer (such as the GSF).

3. Implementation issues in a long-term loan: interest rate risk. Egypt's housing financial markets today face relatively little interest rate risk because:

- The loans are short maturity, typically seven years or less.
- They are originated by non-financial institutions (such as developers) that are financing the loans not through the capital markets but through their own balance sheets or warehouse lines of credit.
- Rates have a wide spread to the safe rate, leaving significant margin given the short holding period and rapid principal repayment.

The market is therefore comfortable with fixed-rate lending.

These dynamics change considerably when the market must handle a long-term loan (such as twenty years).

A GSF repurchase guarantee, as outlined in the preceding section, would constitute a *de facto* interest rate protection:

- Lenders would 'put' their loans (sell them to the GSF) if interest rates had risen in the interval.
- If interest rates fell, lenders would seek to hold the loans, but borrowers would want to refinance to capture the savings,4 and the GSF would likewise want to refund the loans.

[3] Such balloon term debt is common in developed nations with robust real estate markets, because lenders are comfortable that the collateral (the property) can be resold on the balloon date, reducing their loss exposure.
[4] In the US and in many countries, home loan borrowers always have the right to pay off their loans, in full, without penalty. We presume this is also true in Egypt, but it should be verified.

An environment of falling interest rates poses no threat to homeowner affordability, but a rising environment is a considerable challenge. While more than likely the property's value would also have risen, it could be politically very difficult to impose a higher monthly debt service payment at the refinancing point (five years out), so the government, via the GSF, might elect to impose a cap on future debt service payments (e.g. the original payment increased by a CPI inflation factor). Such a cap creates a contingent subsidy obligation and would be a significant step if taken.

4. Importance of viable resales and refinancings: registered title. Twenty years in one property is a long time, even in Egypt, where home owners stay in the same flat much longer than in other countries with more fluid real estate and mortgage markets. More than likely, the home owner will want either to sell the flat or to refinance it, possibly more than once.

Resale and refinancing depend on a viable secondary (resale) market for both properties and loans. Neither functions well in Egypt today. Both will improve as the broad array of financial sector reforms takes hold -- and since the AHPP contemplates a six-year or longer rollout, we can anticipate that the capital market will be significantly more liquid in the program's later years. The GOE should design the AHPP expecting that market improvements will occur as the program moves forward.

We particularly see great value in having registered title as a condition of participation on the Affordable Home Production Program. This will benefit the homeowners, as they will be more readily able to refinance. It will also benefit the GSF as the lender, because registered title will reduce the risk of default on individual home loans and the loss given default.

Title registration should be established at inception, with new construction. The deed transferring undeveloped land to the development entity should begin a chain of registered title that every subsequent holder is required to maintain. Moreover, title registration should be expedited for all AHPP participants.

3.2.2 Raising the monthly payment of participating home buyers

Affordability is a relative concept influenced by household and market factors. Raising the 'affordable' payment amount increases supportable debt and thus lowers government's dependency on down payments and down payment subsidy.

3.2.2.1 Indexing the definitions for inflation. Current definitions of Low-Income are stated in nominal Egyptian pounds; they are not indexed for inflation. This means that over time, they will become increasingly narrow.

At a minimum, all definitions should be inflation-indexed. (As these definitions are several years old, they need to be updated promptly.)

3.2.2.2 Using a payment-to-income (PTI) ratio higher than 25%. Under the Real Estate Finance Law, the maximum payment-to-income (PTI) ratio is 25%. This is considerably lower than market affordability, which rises as high as 40%. PTI ratios of 30-35% are common and accepted in the conventional market.

Capping PTI below market levels has curious and undesirable consequences. Those who qualify gain a significant bargain, *but* they must come up with a much larger down payment than if a higher PTI were used. The result is that their ongoing affordability is better, but it takes much longer for them to participate. In the meantime, many who are otherwise unable to finance find themselves having to buy homes in the open market, where 30%-35%-40% is the norm.

In other words, a PTI below market is self-defeating, as it excludes many who would benefit considerably from mortgage finance.

Financial analysis will also demonstrate that low PTI's place a severe constraint on AHPP program volume, as they dramatically extend the time required for a home buyer to accumulate enough down payment to afford an AHPP home.

3.2.2.3 Allowing moderate-income customers to participate as well. Financial analysis demonstrates that many households, whose income is higher than the Low Income ceiling, nevertheless face housing challenges in Egypt, especially in the metropolitan areas. Providing housing for them is therefore a valid public policy goal.

It is also cost-effective, since higher-income households will be able to afford larger loans, reducing the required down payment subsidy.

Finally, mixing in some (as we will call them) Moderate-Income households allows a greater configuration and size diversity in AHPP properties. Income mixing has proven effective throughout the world, as it provides role models, configuration flexibility and mobility, and more diversified and thus healthier communities.

One could imagine a property or scheme consisting of an income mix such as 50% Low, 25% Moderate, and 25% market. The market homes would not count in the AHPP total, but the potential profit from those homes can also provide an internal subsidy reducing the aggregate outlay required on the Low and Moderate income homes.

3.3. Down payment and funding

Whatever portion of the purchase price not funded through a loan (*see Section 3.2*) must be funded with a cash down payment. This, in turn, will be a mixture of customer savings and government cash subsidy.

(The discussion that follows presumes there are no legal impediments in Egypt to a savings program such as the one described here. This should be tested by having the proposal reviewed by affected stakeholders, including Ministry of Justice, Ministry of Finance, Ministry of Investment, MFA, commercial banks, MFCs, and property developers.)

3.3.1 World best practice for home down payment savings programs

Experience throughout the world has shown that:

1. ***Savings precedes borrowing***. That is, programs to enable households to save are tremendously effective in preparing families for homeownership. They increase participation rates and later success rates. Moreover, "save for your home" programs create stakeholder awareness and goodwill. They are also effective when it may take some time (for instance two and a half years) before the first homes are actually delivered.
2. ***Subsidy delivery should be earned, not a birthright***. Programs that simply give qualifying households a lump sum 'as of right' encourage a sense of entitlement and discourage savings behaviors. Far more successful are programs that match savings with subsidy when the total reaches some critical amount.
3. ***Terms must be established up front***. A savings-match program represents in effect a moral contract with depositors. Its terms should be spelled out before the program opens and then adhered to. While the terms could be changed for latecomers, anyone *in* the program should have the same bargain originally offered.

In both Germany and Chile, savings-match programs have proven effective.

By contrast, South Africa first introduced a 'birthright' subsidy (R 20,000 per African adult as of 1994), only to discover later that this produced perverse outcomes. When changes were proposed, they were greeted with intense stakeholder opposition including non-compliance and even violence.

3.3.2 Establishing savings programs

A savings-deposit program should be introduced as it will serve multiple purposes simultaneously:

- Demonstrate demand and provide a statistical basis for projections.
- Expand awareness nationwide and generate interest in the AHPP program.
- Enable customers to accumulate savings before they need to buy.
- Provide an allocation or queuing mechanism for the desirable homes.
- Create a forum for consumer education, financial literacy, and home buyer counseling.

Elements to be considered in the program include the following:

> ***3.3.2.1 Pre-completion purchase***. Customers who sign up for a "save for your home" program should consider themselves as making an installment purchase of a home, subject to future conditions. The savings accounts would be established with banks, financial institutions, and MFCs, but should be available only to those who commit -- again, subject to government delivery of a qualifying home -- to buy the homes at stipulated prices and terms.
>
> The savings account will therefore serve as an indicator of demand as well as a source of statistics and an 'installed base' of pre-sold customers.

3.3.2.2 Variable deposits. Low-income households have difficulty achieving and sustaining any particular rate of savings. In light of this, savings requirements should be variable, although customers should be given incentives to make *some* monthly or weekly savings, even if it is a small amount, so as to build the habit.

3.3.2.3 Entry deposit, place in the buying queue. Entry into the savings program might require the customer to demonstrate an initial deposit (say, LE 500), as a screen to assure that those in the program have some assets and some personal investment in the program. (Often the initial deposit will be funded from an extended family.)

3.3.2.4 Financial literacy and consumer education. Savings is one of the necessary skills to be a home buyer, but there are others. Property loans are complicated instruments. Many customers will be unfamiliar with title registration or its benefits and may have false impressions or simply erroneous information. Throughout the world, these consumer-education programs are effective on many fronts:

- They increase customer participation in home buying programs.
- They decrease default rates after home purchase.
- They help banks, financial institutions, and MFCs identify prospective customers.
- They build a pipeline of buyers, lowering search and transaction costs.

There are numerous global best-practice examples of such programs.

3.3.3 Elements of a savings-match plan

Presuming that a savings-match plan must be an element in the Affordable Home Production Program, there are nevertheless, numerous design choices in establishing the program. These include the following:

3.3.3.1 Who qualifies? How is eligibility verified? The program will offer a dual benefit: not only access to an affordable home but also to a subsidy (the savings match). It will be popular. Thus, it will be essential at the outset to define who is eligible, and how eligibility is verified. Further, customers who enter the program will be savings funds for periods anywhere from half a year to three years, during which time their circumstances may change (new job, promotion, marriage, children). The program guidelines will need to address questions such as these:

1. *How to qualify?* Will participants be screened for income?
2. *Assets or income?* The definition of Low Income does not speak to assets. Should high-asset customers (for themselves or via their family such as parents or grandparents) be disqualified?
3. *Once in, always in?* If a participant enters the program but later becomes over-income, is he or she disqualified?

3.3.3.2 Percentage match. What percentage match should the savings earn? It would seem that anything below 50% would be too small to provide sufficient motivation. A 1-for-1 match is common, for obvious reasons of simplicity, comprehensibility, and motivation.

Higher matches will lead to much more rapid accumulation of sufficient down payments, which is good for program volume, but bad in that it significantly increases program cost.

3.3.3.3 Vesting of percentage match, timing of payment. Customers who *complete* the program will earn a subsidy to use as part of their down payment to buy a qualifying AHPP home. Should the customer have any vesting in the subsidy before that moment? Should some of the subsidy transfer into the customer's account?

Both vesting and transfer are devices to increase customer confidence in the program's credibility. Vesting costs nothing, but transfer will represent an expenditure of funds.

3.3.3.4 What happens if savings falter? Should customers have withdrawal rights, and if so, under what circumstances? If they do withdraw, do they forfeit the match? The greater the withdrawal rights, the more the program looks like a pure savings account with a limited housing convertibility feature. A program that is specifically and exclusively designed for home savings and lacks withdrawal features will require more of a leap of faith by customers.[5]

3.3.3.5 Achieving target down payment. While the down payment target can be calculated at inception, home prices and interest rates will change over time, making the required down payment rise or fall. Will customers have, in effect, a pre-funded loan amount so that the down payment target is fixed, or will the required down payment change in response to market conditions?

3.3.3.6 What happens if homes are delivered late? Customers will expect that when they have saved the requisite down payment, they will be able to buy a home immediately. The savings program will also start soon, months and years before the first homes are actually delivered. What happens to customers who reach the required savings level but have no completed home ready to buy? Will they be then vested with their down payment match? Will they be allowed to withdraw cash from the program? If they are compelled to wait for a home, will they be placed in a preferred priority queue for the first available new homes?

4. Delivery and capacity

The preceding section has dealt with affordability at the level of individual home buyers. The program must also deal with its need to produce 500,000 homes. This is a very large commitment, and one that will strain the physical capacity of the Egyptian building industry to create new homes, as well as the governmental and public-private capacity to create and administer a program that will involve roughly LE 25 billion in total property value.

[5] It will also create a curious effect where skeptical customers might begin savings in a normal account, then open a "save for your home" account only later in the program. This would place them later in the home buying queue but would preserve their options.

Among the challenges are at least these:

1. Identification of suitable plots, in areas where there is (a) plenty of demand from the right target group, (b) room to build, (c) access to services and jobs, and (d) the possibility of mixing uses and incomes.
2. Delivery of trunk infrastructure to the chosen sites, which must be in place before homes are sold (and much of it in place before construction can begin).
3. Establishment of rules for participating developers, including prior performance, financial capacity, construction capacity, terms of the construction or development agreement, and rates of payment.
4. Establishment of appropriate roles and responsibilities among national government, regional or provincial government, and local government. Division of responsibility and creation of operating entities within affected ministries.
5. Establishment of proper title registration to enable homes to be financed, refinanced, and sold.
6. Ability of developers to build so many homes in such a short time, and maintain construction quality.
7. Arranging financing lines in the vicinity of LE 20 billion of total construction loan debt.
8. Coordinating these financing lines together in an overall financing plan for the program, and assuring that each piece works and can adjust to changing market conditions over the program's rollout.
9. Assuring that costs do not escalate beyond normal inflation.
10. Identifying and educating potential home buyers of the responsibilities of ownership and paying debt service.
11. Qualifying home buyers and assuring they meet the necessary criteria. (Customers must be *above* the minimum income needed to pay debt service on the loans, but *below* the Low Income ceilings that would disqualify them from the program.) This may be a further challenge if their income is informal, fluctuates, or is subject to interruption (unemployment, seasonal employment).
12. Raising down payments from home buyers who have low income and historically had difficulty saving. This is imperative because if buyers are given homes with a combination of loans and subsidy -- and no down payment -- they will not think themselves owners and will be prone to high default rates. (This problem plagued South Africa's first national-scale initiative in 1995-97.)
13. The necessity to establish program guidelines up front, and stick to them. However, set against the public's hunger for program details may lead to promises being made that are difficult or impossible to keep.

All these challenges can be addressed, but as the program is new, unprecedented, and very large scale, it is critically important that the program be well designed *from the beginning*.

4.1 Program rollout and creating new capacity

4.1.1 Timing parameters and measuring progress over six years

A complex program of this kind will require a significant interval to put in place. A period of two years has been suggested, and seems realistic.

Once this is recognized, financial analysis rapidly demonstrates that it will be difficult, if not impossible, to *complete and sell* 500,000 new homes by the end of six years (that is, by December 2012, assuming a January 2006 start date). Accordingly, the program must either have a longer horizon than six years, or a more refined definition of completion and success.

Customers who are actively saving for homes should be considered as 'successful participants,' given that for many of them it will be the down payment assembly that will govern when they can actually buy a home.

4.1.2 Proposed timetable

In view of the foregoing, a reasonable timetable would be as follows:

Table 4.1.2
Affordable Home Production Program:
Four Phases, Timetable

Phase	Years	Begins	Ends	Activity
1	2.0	Jan-06	Dec-07	AHPP conceptualized, designed. Necessary laws (regulations) enacted or amended. Program guidance developed, including development, construction, financing, application procedures. Savings program put in place, opens accounts from early in 2006. Consumer education, outreach, customer awareness expands. Program establishes a queue of savers and even some who have already achieved necessary deposit payments.
2	0.5	Jan-08	Jun-08	Construction of first homes. First buyers move in by June, 2008.
3	3.5	Jul-08	Dec-12	Active rollout, program functions in mature fashion, continues taking in new participants, reaches 500,000 families in savings/ homeownership program
4	3.0	Jan-13	Dec-15	Program ceases taking in new savers, but continues to deliver homes to those already in the savings program.

4.2 Inflation and cost of capital

4.2.1 The general impacts of time delays

A six-year interval (and longer, if one allows for post closeout delivery of homes in the pipeline) means that the time value of money will become significant. Inflation will increase construction costs, but will also increase buyers' incomes. Interest will be earned on savings deposits, and on any endowment or funding obligation from the GOE to the GSF.

4.2.1.1 Delays in time will not reduce overall program cost. As a general principle, *delays in time will not reduce the overall program cost in net present value terms*, because:

- **Inflation** generally will hurt rather than help because as Egypt urbanizes, the price and value of urban property will continue to rise, probably faster than the rate of nominal inflation.
- **Interest earned** on short-term deposits will typically not keep up with inflation.
- **Costs to borrow** usually exceed both inflation and short-term earnings, typically by wide margins.

4.2.1.2 Benefits of time delays. Time *will* be an ally in a few ways:

- Time will enable AHPP participant households to save *before* they buy.
- Customers who have entered the program can be counted as successes.
- Subsidy can be paid out when required (that is, vested and paid at home purchase), not up front.

4.2.2 Structuring implications of time delays

The multi-year delivery and purchase sequence compels some structuring issues in establishing prices and terms.

4.2.2.1 Capping increases in AHPP home prices. For the reasons discussed above, customers who enter the program should have a reliable 'option price' at which they will be able to buy their homes. Price increases over time should either be specified or indexed to a formula (such as CPI) that means they are roughly the same cost in real (inflation-adjusted) terms.

4.2.2.2 Customer eligibility. As discussed above in 3.3.3, once households have become participants in the AHPP "save for your home" program, they should be considered always-eligible so long as they comply with program requirements. To do otherwise will penalize success and needlessly anger customers.

4.2.3 Costing implications: government discount rate

When the government is choosing its financial best option, it must establish a discount rate for converting future cash flows (payments and receipt) to net present value (NPV). The Affordable Home Production Program is a Government of Egypt initiative that will be supported with substantial government subsidy and other revenue pledges.

The GOE is a customer in the capital markets, selling Treasury notes. Increased costs of the AHPP will be reflected in an increased Egyptian public sector borrowing requirement (PSBR) and therefore funded, directly or indirectly, through the proceeds of Treasury notes.

We believe, therefore, that the appropriate discount rate to use in NPV comparisons is the Egyptian Treasury rate, which is currently in the vicinity of 8.25%.

5. Analysis of certain program elements

The preceding discussion has surveyed all areas that the GOE could explore in shaping the Affordable Home Production Program. This section will refine that survey by identifying the principal elements, and providing some representative sensitivity analysis showing the impact of particular changes.

The Recommendations Paper will set forth a proposed overall approach that appears promising.

5.1 Principal elements of the Affordable Home Production Program

From the foregoing discussion, it appears that the principal initiatives where the GOE can enhance the Affordable Home Production Program's affordability and success are the following:

5.1.1 Land and infrastructure cost (see ¶3.1.1). The GOE will provide considerable in-kind value. A reasonable estimate would be LE 31,000 per home, or more than LE 15 billion total for 500,000 homes. Some of this (e.g. land) is truly in-kind, some (e.g. trunk infrastructure) is public-works expenditure not normally expected to produce a direct government return, and some is an effective donation (e.g. site infrastructure and half cost). It all adds value and is essential if the homes are to sell for LE 50,000 or less.

5.1.2 Building costs (see ¶3.1.2). Private builders will construct the flats, but to GOE requirements. The GOE's specifications of apartment configuration, size, and amenities will control affordability. A design-build value-engineering team encompassing both contractors and public-sector officials should be established immediately, with a goal of producing a cost-effective mix of flat types.

5.1.3 Transaction soft costs (see ¶3.1.4). The lower these costs, the better. We are presuming that the GOE will waive normal recordation costs, and will expedite and facilitate closings to minimize transfer and closing costs.

5.1.4 Interest rate (see ¶3.2.1.1). Market rates have a generous spread reflective of the imperfection of collateral and the market risk. The GOE and GSF should be able to narrow this spread, perhaps as much as 200 basis points.

5.1.5 Term of loan (see ¶3.2.1.2). Although seemingly arcane, a loan term offers the prospect of a very substantial boost in affordability, with consequent increase in program production over the six years. While the financial engineer to produce a long-term instrument is a challenge, it offers enormous benefits and is consistent with larger Egyptian financial markets objectives.

5.1.6 Indexing income caps for inflation (see ¶3.2.2.1). Essential if the program is not to become progressively less effective.

5.1.7 Payment-to-income (PTI) ratio (see ¶3.2.2.2). Raising this above the 25% mandated in the REFL would eliminate an unnecessary handicap and also, not coincidentally, both greatly increase program volume *and* reduce subsidy cost. The Cash Flow Model demonstrates this unequivocally and dramatically.

5.1.8 Savings match percentage (see ¶3.3.3.2). Clearly, a policy choice with direct and measurable consequences. Higher match percentages mean much faster home ownership take-up rates, but also mean much higher government subsidy expenditure.

5.2 Sensitivity analysis

To aid readers in gauging the relative impact of these variables, Table 5 presents sensitivity analysis whose estimates are derived from the Cash Flow Model.

Table 5
Sensitivity analysis: significant AHPP program elements

Element	*Base*	*Improved*	*Impact*	*Discussion*
1. Land/ infrastructure				
2. Build costs				
3. Soft costs				
4. Interest rate				
5. Loan term				
6. Index income caps				
7. Payment-To-Income				
8. Savings match				

[Figures to come once the cash flow model has been properly defined and coded.]

Based on the foregoing, the most promising areas are loan term, PTI, interest rate and savings match.

A recommended configuration is provided in the Recommendations Paper that accompanies this concept package. [Unwritten; to come pending resolution of the structuring discussion.]

6. Conclusion

The Government of Egypt has established a three-part ambitious goal:

- Create 500,000 new home
- Deliver the program in six years from now
- Work within a tight budgetary constraint (LE 3.0 billion initially)

This is an enormous challenge that is achievable *only* with some significant program design and financial engineering. This Options Paper lays out the tools available.

The accompanying Recommendations Paper provides financial analysis and a recommended configuration to pursue.

Egyptian Affordable Home Production Program ("AHPP")
Cost Estimates

All figures presented in this summary have been derived from the cash flow financial model (the "Model") and are referenced with respect to pages in that Model, thus [Ex 7.1] means Exhibit 7.1.

1. Impact

Based upon the program parameters shown in the attached financial projection, the Affordable Home Production Program will have these aggregate impacts:

1. By January, 2012, 412,500 households [Ex 7] will be enrolled in the AHPP savings and home-buying program; of these, 157,500 households will have bought homes.
2. Total cost (in nominal pounds) to the Government of Egypt (GoE) will be roughly LE 10.5 billion [Ex 12], or approximately LE 15,300 per home sold [Ex 11], consisting of:
   - LE 6.4 billion in down payment subsidies (average LE 9,400 per household)
   - LE 4.0 billion in bond discounts (LE 5,900 per home) to cover the cost of bringing down the customer's loan interest rate to 10.75% [Ex 3], 300 basis points below the projected market interest rate of 13.75%.
   - Aggregate discounted present cost (at 10.0% rate [Ex 9.1] of both funding sources will be LE 5.7 billion.

2. Other program features

Accomplishing this program requires the GoE to achieve the following important financing elements:

1. Typical home of 40 m² [Ex 5] with average hard cost of LE 750 per m² [Ex 5], or LE 30,000 direct construction cost per home [Ex 5].
2. Aside from land contributed free (but assumed to have an in-kind value of LE 10,000 per home [Ex 5]), additional trunk infrastructure will cost LE 12,000 per home [Ex 5]. Of this, 50% (LE 6,000 per home) is paid by the property and must be financed.
3. Construction lending to the building industry at 13.75% [Ex 4] over a projected average construction period of 2.5 years [Ex 4], resulting in LE 7,200 of construction period interest.
4. Resulting home has a Total Development Cost of LE 48,600 [Ex 5], plus another LE 16,000 [Ex 5] of 'subsidy in-kind' (consisting of free land and 50% of trunk infrastructure)

5. Households will pay an average of LE 350 per month in debt service [Ex 2] which is 23% of the family's projected LE 1,500 per month income [Ex 2] and supports a loan of LE 34,500 [Ex 2].
6. GoE (via the GSF) can sell 20-year fixed-rate bonds at 13.75% [Ex 3] in the total volume of LE 19.5 billion [Ex 12], secured by LE 23.5 billion of below-market AHPP loans that sell at an average discount of 17% from par [Ex 9].
7. Home buyers save for their down payment and receive a down payment subsidy equal to two-thirds of the required LE 14,100 down payment [Ex 6.B]; typical customer takes 2.25 years [Ex 6B] to save the required down payment.

Exhibit 12

Annual volume and cost

Affordable Home Production Program ("AHPP")

	(Aggregate volumes	1,000,000	Egyptian pounds: LE)
500,000	**homes financed in**	**6**	**years**

A. Program volume and performance

A. Participation		**Thru 2015**	**Thru 2012**	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Customers	-	**500,000**	405,000	9,000	33,000	57,000	81,000	105,000	120,000	95,000	-	-	-
Homes sold	-	**500,000**	157,500	-	-	4,500	27,000	51,000	75,000	99,000	118,500	120,000	5,000
B. Volume in		**1,000,000**											
Construction volume		-	**33,195**	-	-	246	1,534	3,037	4,687	6,494	8,156	8,670	372
Loan volume		-	**23,565**	-	-	175	1,089	2,156	3,327	4,610	5,790	6,155	264
Down payments		-	**3,209**	-	-	24	148	294	453	628	788	838	36
Subsidy paid out		-	**6,421**	-	-	48	297	587	907	1,256	1,578	1,677	72
Bond discount subsidy			**4,030**	-	-	30	186	369	569	788	990	1,053	45
NPV down pay sub		-	**3,510**	-	-	38	219	395	555	699	800	773	31
NPV bond discount		-	**2,203**	-	-	24	137	248	348	439	502	485	20

B. Market financing and home buying

Page		
3	13.75%	interest rate required to sell AHPP long-term bonds
4	13.75%	interest rate on AHPP construction loans
3	-3.00%	Interest subsidy annually
3	10.75%	loan rate, 20 -year term AHPP loans
3	**Gov't**	Who makes AHPP loans, market or government?
2	40%	Market payment-to-income (PTI) ratio
2	23%	AHPP Payment-to-income (PTI) ratio

C. Home buyer household profile

Page		
2	1,500	Monthly income of typical home buyer
2	150	Projected savings rate (monthly)
6	200%	subsidy match of home buyer's savings
1	30%	Payment-to-Income ratio to be specified
2	Current	Use PTI ratio or the current payment?
2	No cap	Is customer payment capped?
	300	Monthly cap, if used
2	350	Customer monthly debt service payment

D. Property-level outcomes

D1. Property construction

Page		
5	40	Size of home in square meters
4	2.50	Construction interval (years)
4	7,233	Total construction interest per home

D2. Resulting per-home total development cost

	Per home	*% total*	*% price*
Total development cost	64,600	100%	
In-kind (land, infrastructure)	16,000	25%	

E. Program participation

E1. Typical participant and home saver

Page		
6	9	periods (27 months) of savings required
6	2.25	years for customer to save down payment

E2. Savings participation rates

7	500	initial monthly savers participating
7	500	increase in monthly savers
7	10,000	maximum monthly savers participating
7	157,500	total participants who buy within years from start

				7		6
Sales price of typical home	48,600	75%	100%	7	255,000	additional participants in savings program
Supportable loan per home	34,500	53%	71%	7	412,500	total Egyptian families in the program
Required down payment	14,100	22%	29%	11	1-Jan-13	Last customer enrolls, last sale 1-Apr-15

F. Government cost

10	10%	net present value (NPV) discount rate on government outlays

		Figures in	1,000,000
	Per home	*Aggregate*	*NPV*
Down payment subsidy	9,400	6,421	3,510
Bond discount subsidy	5,900	4,030	2,203
Total subsidies	15,300	10,451	5,713